

PROCEDURE

ORIGINAL DATE: 09/02

REVISION DATE:

05/13

SUBJECT: ABI (ANKLE BRACHIAL INDEX)

PURPOSE: The Ankle Brachial Index or ABI is utilized as a screening tool to rule out arterial insufficiency and/or mixed (venous/arterial) disease, and to determine safe/appropriate compression therapy and wound debridement for the non-diabetic individual¹ with a lower extremity wound(s).

Equipment Needed

- BP cuff
- Doppler
- Conductive gel
- Calculator

Procedure

1. Wash hands, and using clean technique perform the following:
2. Explain procedure to patient/significant other.
3. Apply blood pressure cuff to leg just above malleoli. If there are wounds in this area, cover wounds with a dry sterile dressing(s). If the wound is dressed, leave the dressing in place.
4. Use the doppler to obtain either dorsalis pedis or posterior tibial pulse.
5. Utilize the pulse that has the strongest reading and inflate the blood pressure cuff until Doppler pulse can no longer be heard.
6. Release the pressure, noting the pressure at which the Doppler pulse becomes audible once again. Use highest ankle pressure for ABI calculation.
7. Remove blood pressure cuff, clean the lower extremity of gel.
8. Repeat steps 3-6 for other lower extremity.
9. Apply the blood pressure cuff to the upper arm, in the standard fashion for determining blood pressure.
10. Use the Doppler to obtain the brachial pulse.
11. Repeat steps 5 through 7 as applicable to the upper extremity.
12. Repeat for other upper extremity.
13. ABI calculation is found by dividing the Doppler ankle pressure by the Doppler brachial pressure (ABI = Ankle Pressure/Brachial Pressure)

Interpretation

<u>ABI Measurement</u>	<u>Arterial Status</u>
> 0.95 – 1.0	Normal
> 0.6 but < 0.95	Mild arterial insufficiency – PVD
< 0.6 but > 0.5	Moderate arterial insufficiency – Intermittent Claudication
n < 0.5	Severe arterial insufficiency – multi-level disease; may have resting ischemic pain and/or gangrenous extremity

Note: Do not apply compression therapy or provide debridement of any type to a limb with ABI less than 0.8. Report an ABI of <0.9 to the primary care physician and request a vascular consult and/or vascular studies (refer to recommendations below). Provide treatment based upon the results of and orders from the vascular consult and/or vascular studies (see recommendations.) Provide treatment based upon the results of and orders from the vascular consult. If vascular consult is not ordered, treat patient conservatively-do not debride an adherent, non-draining eschar or compress the limb. Use light compression if ordered by the MD to treat diabetic individuals with CVI and/or venous ulceration provided that the patient has palpable pulses. Profore Lite® and single layer of compression stockinette (i.e. – tubigrip) is considered appropriate light compression.

Recommendations

1. Segmental Arterial Pressure studies are indicated for individuals with ABI < 0.9 and angiography or Magnetic resonance angiography (MRA) should also be considered.
2. ABI by hand held Doppler is unreliable in the individual with diabetes as vessels in diabetics are poorly compressible. This results in a falsely elevated ankle pressure. If considering compression or debridement for the individual with diabetes, request a vascular consult and non-invasive vascular testing-segmentals with toe pressures and TCOMs are ideal. If this is not possible for the patient, treat patient conservatively-do not debride an adherent, non-draining eschar or compress the limb.

Reference(s):

1. Ankle-Brachial Index, Family Practice Notebook.com, 2003
2. Carman (2000) Ann Fam Physician 61(4): 1027-32